9 MBD

9.1 INTRODUCTION

MBD is a supplemental processing procedure designed to enhance faint or indistinct impressions developed by super glue processing. MBD has an affinity for adhesion to polymerized latent impressions even at levels below visual observation. Excitation of MBD with the ALS produces extremely bright fluorescence at about 450 nm.

9.2 PREPARATIONS

The examiner can mix one preparation of MBD.

9.2.1 Methanol Formula

1. Dissolve 0.12 grams of MBD in 4.0 liters of methanol.

9.3 INSTRUMENTATION

Alternate Light Source

Alternate light sources can be used to illuminate the evidence and produce the desired fluorescence. The most common wavelength of light used is 450 nm.

Proper safety precautions including avoiding skin exposure and proper eye protection with appropriate optical densities should be utilized when operating ultraviolet light sources, or alternate light sources. Consult the appropriate users manuals for the safe use and appropriate eye protection for the specific piece of equipment being utilized.

9.4 MINIMUM STANDARDS & CONTROLS

Dye stains, such as MBD, work by discoloring latent impressions developed with cyanoacrylate ester. Due to their inherent ability to stain and discolor the ridge detail, there is no need for test impressions to be done prior to evidence application.

9.5 PROCEDURE OR ANALYSIS

All applications should be done in a fume hood.

1. Apply the solution to the item to be processed by immersion or squirt bottle.
2. Allow to dry.
3. Examine the item with the alternate light source at, 450 nm using the appropriate filters.
4. Have any impressions photographed.

9.6 INTERPRETATION OF RESULTS

If the impressions are faint, repeated applications of the MBD solution may be attempted. Photographic preservation incorporating orange filters as used in the evidence examination or a Wratten #21 filter, and panchromatic films prove quite successful with even faint fluorescence.

9.7 REFERENCES

1. Lennard, Christopher J.; Pierre A. Margot. "Sequencing of Reagents for the Improved Visualization of Latent Fingerprints"; *Journal of Forensic Identification*, September/October 1988, 38, 5, 197-210.

2. Kent, Terry, ed. *Fingerprint Development Techniques;* Heanor Gate Publisher: Derbyshire, England, 1993.

3. Menzel, E. Roland. *Fingerprint Detection with Lasers*; Marcel Dekker: New York, 1980.

5. Menzel, E. Roland. "A Guide to Laser Latent Fingerprint Development Procedures"; *Identification News*, September 1983.

6. Menzel, E. Roland. "Detection Of Latent Fingerprints By Laser-excited Luminescence"; *Analytical Chemistry*, 1989, 61, 8, 557-561.

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